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(19) 世界知的所有権機関  
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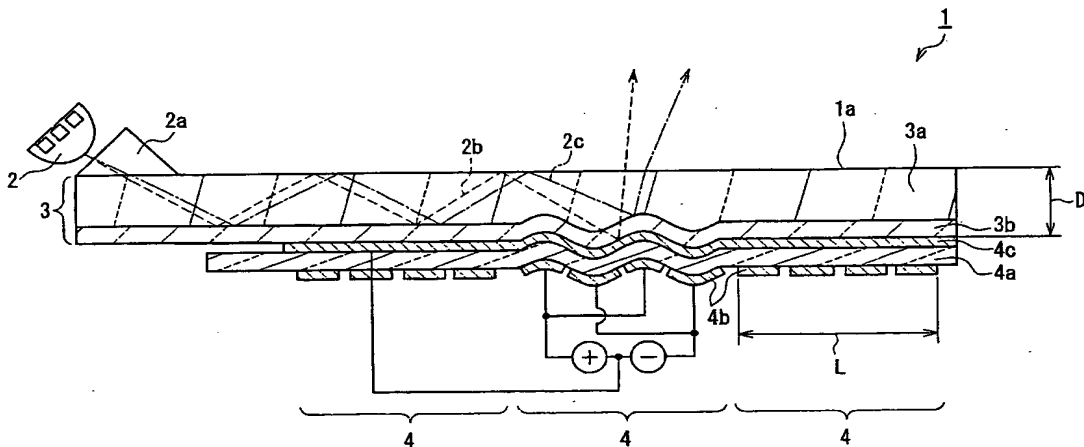
PCT

(10) 国際公開番号  
WO 2004/042449 A1

- (51) 国際特許分類: G02B 26/08 吹田市 西御旅町 8-1-1101 Osaka (JP). 西山 誠司 (NISHIYAMA, Seiji) [JP/JP]; 〒573-0163 大阪府 枚方市 長尾元町 7-4-45 Osaka (JP).
- (21) 国際出願番号: PCT/JP2003/014047
- (22) 国際出願日: 2003年11月4日 (04.11.2003) (74) 代理人: 特許業務法人池内・佐藤アンドパートナーズ (IKEUCHI SATO & PARTNER PATENT ATTORNEYS); 〒530-6026 大阪府 大阪市 北区天満橋1丁目8番30号OAPタワー26階 Osaka (JP).
- (25) 国際出願の言語: 日本語
- (26) 国際公開の言語: 日本語 (81) 指定国 (国内): CN, JP, KR, US.
- (30) 優先権データ: (84) 指定国 (広域): ヨーロッパ特許 (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).
- 特願2002-320895 2002年11月5日 (05.11.2002) JP  
特願2003-131340 2003年5月9日 (09.05.2003) JP
- (71) 出願人 (米国を除く全ての指定国について): 松下電器産業株式会社 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.) [JP/JP]; 〒571-8501 大阪府 門真市 大字門真1006番地 Osaka (JP).
- 添付公開書類:  
— 国際調査報告書  
— 請求の範囲の補正の期限前の公開であり、補正書受領の際には再公開される。
- (72) 発明者; および  
(75) 発明者/出願人 (米国についてのみ): 脇田 尚英 (WAKITA, Naohide) [JP/JP]; 〒564-0034 大阪府
- 2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(54) Title: DISPLAY ELEMENT AND DISPLAY USING SAME

(54) 発明の名称: 表示素子およびそれを用いた表示装置



(57) Abstract: A display element has a light source and a waveguide for propagating light emitted from the light source. The light propagated through the waveguide is taken out of the side face of the waveguide to the outside. By varying the shape of the side face of the waveguide, light is taken out of the side to the outside.

(57) 要約: 光源と、光源から出射された光を伝播させる導波路とを備え、導波路中を伝播している光を導波路側面より外部へ取り出す表示素子であって、導波路側面の形状を変化させることで、光を導波路側面から導波路外部へ取り出す表示素子。

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14047

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.<sup>7</sup> G02B26/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl.<sup>7</sup> G02B26/00-26/08, G02F1/167-1/19

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

|                           |           |                            |           |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho       | 1922-1996 | Toroku Jitsuyo Shinan Koho | 1994-2003 |
| Kokai Jitsuyo Shinan Koho | 1971-2003 | Jitsuyo Shinan Toroku Koho | 1996-2003 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                       | Relevant to claim No.    |
|-----------|--|--------------------------|
| A         | US 5106181 A (MARSHALL ROCKWELL III),<br>21 April, 1992 (21.04.92),<br>(Full text)<br>(Family: none)                     | 1-14, 24-25,<br>27, 29   |
| A         | JP 54-142089 A (Nippon Telegraph And Telephone Corp.),<br>05 November, 1979 (05.11.79),<br>(Full text)<br>(Family: none) | 1-14, 24-25,<br>27, 29   |
| X         | US 4218302 A (U.S. PHILIPS CORP.),<br>19 August, 1980 (19.08.80),  | 15-18, 21, 26,<br>28, 29 |
| Y         | Fig. 5; column 6, lines 14 to 43   | 22-23                    |
| A         | & JP 56-42265 A  | 19-20                    |

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
20 February, 2004 (20.02.04)Date of mailing of the international search report  
09 March, 2004 (09.03.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14047

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|-----------|--|-----------------------|
| Y         | EP 1245988 A2 (NGK INSULATORS, LTD.),<br>02 October, 2002 (02.10.02),<br>Par. Nos. [0083] to [0088]<br>& JP 2002-287042 A        | 22-23                 |
| Y         | X.Zhou, E.Gulari, 'Wavelemgth Panel Display<br>Using Electromechanical Spatial Modulators',<br>SID 98 DIGEST, pages 1022 to 1025 | 24                    |

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14047

## Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The technical feature common to claims 1-14; 24, 25; 27; 29 and claims 15-23; 26; 28 is substantially "a display comprising a light source and a waveguide for propagating light emitted from the light source and adapted to take the light propagated through the waveguide out of the side face to the outside". However, the common feature is not a special technical feature within the meaning of PCT Rule 13.2, since it makes no contribution over the prior art (As prior art documents, JP 11-202222 A, JP 7-287176 A, and SID 98 digest pp.1022-1025 are cited). Therefore, there is no special technical feature common to claims 1-29. Consequently, no technical relationship (Continued to extra sheet.)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.  
☒ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14047

Continuation of Box No. II of continuation of first sheet(1)

between the inventions of claims 1-14; 24, 25; 27; 29 and the inventions of claims 15-23; 26; 28 can be seen.